

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

K00002560 Lab ID:

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

K00002560001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.: Station No.:

EMORY012.1RO

Date/Time Collected:

07/07/2009 09:45

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

TEST: Alkalinity, Total

07/07/2009

14:04

Received By:

S Staller

ME	THOD: EPA 310.2				
Γ	UNITS	MDL	MQL	ANALYZED BY:	DATE

Field Determinations

Dissolved Oxygen: 4.96

Chlorine, residual:

Conductivity:

Temperature:

7.12

108

24.87

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

ANALYTE RESULT **Total Alkalinity** 24 mg/L 3.8 10 M Chen 7/15/2009

TEST: Hardness, Calcium METHOD: SM 3500-Ca D MDL MQL **ANALYZED BY: ANALYTE RESULT** UNITS DATE 0.7 Calcium hardness 23 mg/L 1 M Chen 7/20/2009

TEST: Residue, Settleable METHOD: SM 2540F								
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Settleable Residue	U .	ml/L	0.10	0.10	P Leathers	7/8/2009		

TEST: Residue, Suspended	METHOD: SM 2540D							
ANALYTE	RESULT	UNITS	MDL	MQL.	ANALYZED BY:	DATE		
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/10/2009		

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

2

Station No.:

EMORY002.1RO

Date/Time Collected:

07/07/2009 10:45

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

Field Determinations

pH:

7.91

pH Units

Chlorine, residual:

Conductivity:

131

uMHO

Temperature: 26.53

Dissolved Oxygen: 8.17

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Total Alkalinity	38	mg/L	3.8	10	M Chen	7/15/2009		

TEST: Hardness, Calcium	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	35	mg/L	0.7	1	M Chen	7/20/2009

TEST: Residue, Settleable	e, Settleable METHOD: SM 2540F								
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE			
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/8/2009			

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	21	mg/L	10	10	A Peeples	7/10/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit **MQL - Method Quantitation Limit**

K00002560003

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Approx 100' d/s from middle dredge point

Project Site No.:

2A

Station No.:

Dredge Plume

Date/Time Collected:

07/07/2009 10:55

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville **TDEC-WPC**

Billing Code:

327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

TEST: Alkalinity, Total	METHOD: EPA 310.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Total Alkalinity	100	mg/L	3.8	10	M Chen	7/15/2009		

Field Determinations

Dissolved Oxygen: 9.47

Chlorine, residual:

Conductivity:

Temperature:

8.36

210

24.88

pH Units

uMHO

mg/L

CFS

:Hq

Other:

Flow:

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Calcium hardness	80	mg/L	0.7	1	M Chen	7/20/2009		

TEST: Residue, Settleable METHOD: SM 2540F								
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/8/2009		

TEST: Residue, Suspended	F: Residue, Suspended METHOD: SM 2540D							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Total Suspended Solids	15	mg/L	10	10	A Peeples	7/10/2009		

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.:

EMORY001.9RO

Date/Time Collected:

07/07/2009 11:04

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code: Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

TEST: Alkalinity, Total	ME:					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	77	mg/L	3.8	10	M Chen	7/15/2009

Field Determinations

Dissolved Oxygen: 9.71

Chlorine, residual:

Conductivity:

Temperature:

8.48

199

25.05

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	64	mg/L	0.7	1	M Chen	7/20/2009

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/8/2009	

TEST: Residue, Suspended	ME.	4.75				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560005

Project Name:

TVA-Ash Spill

Sample Description:

Dup-Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B FD

Station No.:

EMORY001.9RO

Date/Time Collected:

07/07/2009 11:04

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20

Agency invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009 14:04

Received By:

S Staller

Field Determinations

pH:

8.48

pH Units

Chlorine, residual:

Conductivity:

199

uMHO

mg/L

Temperature:

25.05 **Dissolved Oxygen: 9.71**

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	76	mg/L	3.8	10	M Chen	7/15/2009

TEST: Hardness, Calcium	ME:	METHOD: SM 3500-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	63	mg/L	0.7	1	M Chen	7/20/2009

TEST: Residue, Settleable METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/8/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560006

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Field Blank-Emory River mile 1.9 at underwater

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

CFS

Conductivity:

Temperature:

pH:

Other:

Flow:

Project Site No.:

2B FB

Station No.:

EMORY001.9RO

Date/Time Collected: Sampler's Name:

07/07/2009 11:04

Geoff Klein

County: Sample Matrix: **ROANE - 73**

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code:

327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009 14:04

Received By:

S Staller

TEST: Alkalinity, Total	WE.	METHOD: EPA 310.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	Ū	mg/L	3.8	10	M Chen	7/15/2009

TEST: Hardness, Calcium	ME						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	U	mg/L	0.7	1	M Chen	7/20/2009	

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/10/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560007

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected:

07/07/2009 11:17

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

327.34-20

Send Report To: **Agency Invoiced:**

Date/Time Received:

TDEC-WPC TDEC-WPC

Priority Date:

14:04

Received By:

S Staller

07/07/2009

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	110	mg/L	3.8	10	M Chen	7/15/2009

Field Determinations

Dissolved Oxygen: 11.28

Chlorine, residual:

Conductivity:

Temperature:

8.77

253

25.34

pH Units

uMHO

mg/L

CFS

pH:

Other: Flow:

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	91	mg/L	0.7	1.	M Chen	7/20/2009

TEST: Residue, Settleable	ME	THOD: SM 254				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/8/2009

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/10/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560008

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 0.1

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected:

07/07/2009 11:26

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20 **TDEC-WPC**

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009 14:04

Received By:

S Staller

Field Determinations

pH:

8.80

pH Units

Chlorine, residual:

Conductivity:

247

uMHO

Temperature: Dissolved Oxygen: 11.75

25.50

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	100	mg/L	3.8	10	M Chen	7/15/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	RESULT UNITS MDL		MQL	ANALYZED BY:	DATE
Calcium hardness	82	mg/L	0.7	1	M Chen	7/20/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/8/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	13	mg/L	10	10	A Peeples	7/10/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC002.3RO

Date/Time Collected:

07/07/2009 11:37

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: **Agency Invoiced:** **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

Chlorine, residual:

pH:

Field Determinations

272

8.32

pH Units uMHO

Conductivity:

Temperature: 25.23 **Dissolved Oxygen: 9.63**

Other:

mg/L

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL MC		ANALYZED BY:	DATE	
Total Alkalinity	96	mg/L	3.8	10	M Chen	7/15/2009	

TEST: Hardness, Calcium	ME	THOD: SM 350	0-Ca D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	83	mg/L	0.7	1	M Chen	7/20/2009

TEST: Residue, Settleable	ME:					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/8/2009

METHOD: SM 2540D					
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
10	mg/L	10	10	A Peeples	7/10/2009
	RESULT	RESULT UNITS	RESULT UNITS MDL	RESULT UNITS MDL MQL	RESULT UNITS MDL MQL ANALYZED BY:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002560010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.:

KingAshOutF2

Date/Time Collected:

Sampler's Name:

07/07/2009 11:44

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code: Send Report To: 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

TEST: Alkalinity, Total	ME	THOD: EPA 31				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	99	mg/L	3.8	10	M Chen	7/15/2009

Field Determinations

Chlorine, residual:

Dissolved Oxygen: 8.38

Conductivity:

Temperature:

8.02

272

25.34

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	84	mg/L	0.7	1	M Chen	7/20/2009	

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	7/8/2009

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	15	mg/L	10	10	A Peeples	7/10/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560011

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Field Determinations

Dissolved Oxygen: 12.07

Conductivity:

Temperature:

8.77

273

25.20

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

Sampler Project Name: TVA Ash Spill

Project Site No.:

6

Station No.:

CLINC004.5RO

Date/Time Collected:

07/07/2009 11:54

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

TEST: Alkalinity, Total	MET	METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Total Alkalinity	100	mg/L	3.8	10	M Chen	7/15/2009		

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	86	mg/L	0.7	1	M Chen	7/20/2009	

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Settleable Residue	U .	ml/L	0.10	0.10	P Leathers	7/8/2009

TEST: Residue, Suspended	pended METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	7/10/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit



STATE OF TENNESSEE **DEPARTMENT OF HEALTH ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Lab ID: K00002560

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approyed methodologies.

nalytical Supervisor

K00002560001

Project Name:

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Emory River mile 12.1

Project Site No.:

Station No.:

Date/Time Collected:

EMORY012.1RO 07/07/2009 09:45

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

Received By:

14:04

S Staller

Field Determinations

:Hq

7.12

pH Units

Chlorine, residual:

Conductivity:

108

uMHO

mg/L

Temperature:

24.87 Dissolved Oxygen: 4.96

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT UNITS MDL MQL ANALYZ					DATE
Digestion Metals	07/10/2009				W Frye	7/10/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	160	μg/L	2.9	10	S Ufegbu	7/17/2009

TEST: ICP-MS	MET	ΓHOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	35	μg/L	6.4	10	M Pattanayek	7/17/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	7/17/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	7/17/2009
Barium	41	μg/L	2.5	5	M Pattanayek	7/17/2009
Beryllium	Ŭ	μg/L	0.11	1	M Pattanayek	7/17/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/17/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	7/17/2009
Cobalt	0.24J	μg/L	0.04	1	M Pattanayek	7/17/2009
Copper	2.3	μg/L	0.38	1	M Pattanayek	7/17/2009
Lead	0.33J	μg/L	0.10	1	M Pattanayek	7/17/2009
Manganese	86	μg/L	0.42	1	M Pattanayek	7/17/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	7/17/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/18/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/17/2009
Thallium	0.37J	μg/L	0.03	1	M Pattanayek	7/17/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	7/17/2009
Zinc	3.2J	μg/L	1.9	5	M Pattanayek	7/17/2009

K00002560001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected:

07/07/2009 09:45

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC TDEC-WPC

Agency Invoiced: **Priority Date:**

Date/Time Received:

07/07/2009

14:04

Received By:

TEST: Mercury

S Staller

METHOD	EDA 245 4

Field Determinations

Dissolved Oxygen: 4.96

Chlorine, residual:

Conductivity:

Temperature:

7.12

108

24.87

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.086J	µg/L	0.029	0.2	A Wilson	7/21/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected:

07/07/2009 10:45

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009 14:04

Received By:

S Staller

Field Determinations

pH:

7.91

pH Units

Chlorine, residual:

Conductivity:

131

uMHO

Temperature:

26.53

Dissolved Oxygen: 8.17

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	07/10/2009				W Frye	7/10/2009

TEST: ICP	ICP METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Iron	190	μg/L	2.9	10	S Ufegbu	7/17/2009		

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	308	μg/L	6.4	10	M Pattanayek	7/17/2009
Antimony	0.33J	μg/L	0.33	1	M Pattanayek	7/17/2009
Arsenic	7.4	μg/L	0.93	5	M Pattanayek	7/17/2009
Barium	56	μg/L	2.5	5	M Pattanayek	7/17/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/17/2009
Cadmium	U	· µg/L	0.41	1	M Pattanayek	7/17/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	7/17/2009
Cobalt	0.47J	μg/L	0.04	1	M Pattanayek	7/17/2009
Copper	1.7	μg/L	0.38	1	M Pattanayek	7/17/2009
Lead	0.59J	μg/L	0.10	1	M Pattanayek	7/17/2009
Manganese	64	μg/L	0.42	1	M Pattanayek	7/17/2009
Nickel	1.4	μg/L	0.25	1	M Pattanayek	7/17/2009
Selenium	. U	μg/L	1.3	5	M Pattanayek	7/18/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/17/2009
Thallium	0.30J	μg/L	0.03	1	M Pattanayek	7/17/2009
Vanadium	5.5	μg/L	3.4	5	M Pattanayek	7/17/2009
Zinc	6.9	μg/L	1.9	5	M Pattanayek	7/17/2009

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 2.1

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected: Sampler's Name:

07/07/2009 10:45

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC TDEC-WPC

Agency Invoiced: **Priority Date:**

Date/Time Received:

07/07/2009 14:04

Received By:

S Staller

Field Determinations

pH:

7.91

pH Units

Chlorine, residual:

Conductivity:

131

uMHO

Temperature:

26.53

Dissolved Oxygen: 8.17

Other:

Flow:

CFS

mg/L

TEST: Mercury	METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	Ù	μg/L	0.029	0.2	A Wilson	7/21/2009	

J - Estimated value between MDL and MQL MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560003

Project Name:

TVA-Ash Spill

Sample Description:

Approx 100' d/s from middle dredge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

2A

Station No.:

Dredge Plume

Date/Time Collected:

10:55 07/07/2009

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

Field Determinations

pH:

8.36

pH Units

Chlorine, residual:

Conductivity:

210

uMHO

Temperature: **Dissolved Oxygen:** 9.47

24.88

mg/L

Other:

Flow:

TEST: Digestion Metals METHOD: EPA 200.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	07/10/2009				W Frye	7/10/2009	

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	120	μg/L	2.9	10	S Ufegbu	7/17/2009

TEST: ICP-MS	ME ⁻	THOD: EPA 20	0.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Aluminum	130	μg/L	6.4	10	M Pattanayek	7/17/2009	
Antimony	U	μg/L	0.33	1	M Pattanayek	7/17/2009	
Arsenic	3.8J	μg/L	0.93	5	M Pattanayek	7/17/2009	
Barium	47	μg/L	2.5	5	M Pattanayek	7/17/2009	
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/17/2009	
Cadmium	U .	μg/L	0.41	1	M Pattanayek	7/17/2009	
Chromium	U	μg/L	2.0	5	M Pattanayek	7/17/2009	
Cobalt	0.33J	μg/L	0.04	1	M Pattanayek	7/17/2009	
Copper	5.2	μg/L	0.38	1	M Pattanayek	7/17/2009	
Lead	0.41J	μg/L	0.10	1	M Pattanayek	7/17/2009	
Manganese	53	μg/L	0.42	1	M Pattanayek	7/17/2009	
Nickel	1.3	μg/L	0.25	1	M Pattanayek	7/17/2009	
Selenium	U	μg/L	1.3	5	M Pattanayek	7/18/2009	
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/17/2009	
Thallium	0.15J	μg/L	0.03	1	M Pattanayek	7/17/2009	
Vanadium	5.8	μg/L	3.4	5	M Pattanayek	7/17/2009	
Zinc	5.8	μg/L	1.9	5	M Pattanayek	7/17/2009	

K00002560003

Project Name:

TVA-Ash Spill

Sample Description:

Approx 100' d/s from middle dredge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

2A

Station No.:

Dredge Plume

Date/Time Collected:

07/07/2009 10:55

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

TEST: Mercury

S Staller

MDL MQL ANALYZED BY: **ANALYTE** RESULT UNITS DATE 0.069J μg/L 0.029 0.2 A Wilson 7/21/2009 Mercury

METHOD: EPA 245.1

Field Determinations

Dissolved Oxygen: 9.47

Chlorine, residual:

Conductivity:

Temperature:

:Hq

Other:

Flow:

8.36

210

24.88

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.:

EMORY001.9RO

Date/Time Collected:

07/07/2009 11:04

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

TEST: Digestion Metals	stion Metals METHOD: EPA 200.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Digestion Metals	07/10/2009			-	W Frye	7/10/2009		

Field Determinations

Dissolved Oxygen: 9.71

Chlorine, residual:

Conductivity:

Temperature:

8.48

199

25.05

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Iron	110	μg/L	2.9	10	S Ufegbu	7/17/2009

TEST: ICP-MS	ME	THOD: EPA 20	0.8					
ANALYTE	RESULT	UNITS	MDL	MDL MQL AN		DATE		
Aluminum	120	μg/L	6.4	10	M Pattanayek	7/17/2009		
Antimony	U	μg/L	0.33	1	M Pattanayek	7/17/2009		
Arsenic	4.9J	μg/L	0.93	5	M Pattanayek	7/17/2009		
Barium	54	μg/L	2.5	5	M Pattanayek	7/17/2009		
Beryllium	Ú	μg/L	0.11	1	M Pattanayek	7/17/2009		
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/17/2009		
Chromium	U .	μg/L	2.0	5	M Pattanayek	7/17/2009		
Cobalt	0.31J	μg/L	0.04	1	M Pattanayek	7/17/2009		
Copper	3.5	μg/L	0.38	1	M Pattanayek	7/17/2009		
Lead	0.38J	μg/L	0.10	1	M Pattanayek	7/17/2009		
Manganese	57	μg/L	0.42	1	M Pattanayek	7/17/2009		
Nickel	1.4	μg/L	0.25	1	M Pattanayek	7/17/2009		
Selenium	U	μg/L	1.3	5	M Pattanayek	7/18/2009		
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/17/2009		
Thallium	0.13J	μg/L	0.03	1	M Pattanayek	7/17/2009		
Vanadium	U	μg/L	3.4	5	M Pattanayek	7/17/2009		
Zinc	3.4J	μg/L	1.9	5	M Pattanayek	7/17/2009		

K00002560004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.:

EMORY001.9RO

Date/Time Collected:

07/07/2009 11:04

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

Field Determinations

:Ha

8.48

pH Units

Chlorine, residual:

Conductivity:

199

uMHO

Temperature:

25.05

Dissolved Oxygen: 9.71

mg/L

Other:

Flow:

CFS

TEST: Mercury	y METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	0.054J	μg/L	0.029	0.2	A Wilson	7/21/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560005

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Dup-Emory River mile 1.9 at underwater weir

Project Site No.:

Station No.:

2B FD

Date/Time Collected:

EMORY001.9RO

Sampler's Name:

07/07/2009 11:04

County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009 14:04

Received By:

S Staller

Field Determinations

pH:

8.48

pH Units

Chlorine, residual:

Conductivity:

199

uMHO

Temperature: Dissolved Oxygen: 9.71

25.05

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	07/10/2009				W Frye	7/10/2009	

TEST: ICP	MET	THOD: EPA 200	0.7			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	110	μg/L	2.9	. 10	S Ufegbu	7/17/2009

TEST: ICP-MS	MET	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	120	μg/L	6.4	10	M Pattanayek	7/17/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	7/17/2009
Arsenic	3.9J	μg/L	0.93	5	M Pattanayek	7/17/2009
Barium	53	μg/L	2.5	5	M Pattanayek	7/17/2009
Beryllium	U	μg/L	0.11	1.	M Pattanayek	7/17/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/17/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	7/17/2009
Cobalt	0.33J	μg/L	0.04	1	M Pattanayek	7/17/2009
Copper	1.6	μg/L	0.38	1	M Pattanayek	7/17/2009
Lead	0.30J	μg/L	0.10	1	M Pattanayek	7/17/2009
Manganese	57	μg/L	0.42	1	M Pattanayek	7/17/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	7/17/2009
Selenium	U ~	μg/L	1.3	5	M Pattanayek	7/18/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/17/2009
Thallium	0.10J	μg/L	0.03	1	M Pattanayek	7/17/2009
Vanadium	6.5	μg/L	3.4	5	M Pattanayek	7/17/2009
Zinc	3.1J	μg/L	1.9	5	M Pattanayek	7/17/2009

K00002560005

Project Name:

TVA-Ash Spill

Sample Description:

Dup-Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B FD

Station No.:

Date/Time Collected:

EMORY001.9RO 11:04

Sampler's Name:

07/07/2009 Geoff Klein

County:

ROANE - 73

Sample Matrix:

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC **TDEC-WPC**

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

Field Determinations

pH:

8.48

199

pH Units

Chlorine, residual:

Conductivity:

uMHO

Temperature:

25.05 Dissolved Oxygen: 9.71

mg/L

Other:

Flow:

CFS

ME?	THOD: EPA 24	5.1			
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
U	μg/L	0.029	0.2	A Wilson	`7/21/2009
		RESULT UNITS		RESULT UNITS MDL MQL	RESULT UNITS MDL MQL ANALYZED BY:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560006

Project Name:

TVA-Ash Spill

Sample Description:

Field Blank-Emory River mile 1.9 at underwater Chlorine, residual:

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B FB

Station No.:

EMORY001.9RO

Date/Time Collected:

07/07/2009 11:04

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC

Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009 14:04

Received By:

S Staller

Field Determinations pH:

Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	07/10/2009				W Frye	7/10/2009

TEST: ICP	MET	THOD: EPA 20	0.7			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	U	μg/L	2.9	10	S Ufegbu	7/17/2009

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	Ü	μg/L	6.4	10	M Pattanayek	7/17/2009
Antimony	. U	μg/L	0.33	1	M Pattanayek	7/17/2009
Arsenic	1.2J	μg/L	0.93	5	M Pattanayek	7/17/2009
Barium	U	μg/L	2.5	5	M Pattanayek	7/17/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/17/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/17/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	7/17/2009
Cobalt	U	μg/L	0.04	1	M Pattanayek	7/17/2009
Copper	· U	μg/L	0.38	1	M Pattanayek	7/17/2009
Lead	U	μg/L	0.10	1	M Pattanayek	7/17/2009
Manganese	0.60J	μg/L	0.42	1	M Pattanayek	7/17/2009
Nickel	0.55J	μg/L	0.25	1	M Pattanayek	7/17/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/18/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/17/2009
Thallium	0.030J	μg/L	0.03	1	M Pattanayek	7/17/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	7/17/2009
Zinc	U	μg/L	1.9	5	M Pattanayek	7/17/2009

Sample Description:

K00002560006

Project Name:

TVA-Ash Spill

Field Blank-Emory River mile 1.9 at underwater Chlorine, residual:

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B FB

Station No.:

Date/Time Collected:

EMORY001.9RO 07/07/2009 11:04

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

TEST: Mercury

S Staller

METHOD	EDA	245 4	

Field Determinations

Conductivity:

Temperature:

Dissolved Oxygen:

CFS

:Hg

Other:

Flow:

ANALYIE	RESULT	UNITS	MDF	IVIQL	ANALTZED BT:	DAIL
Mercury	U	μg/L	0.029	0.2	A Wilson	7/21/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560007

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected:

07/07/2009 11:17

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: Billing Code:

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009 14:04

Received By:

S Staller

Field Determinations

pH:

8.77

pH Units

Chlorine, residual:

Conductivity:

253

uMHO

Temperature:

25.34

Dissolved Oxygen: 11.28

mg/L

Other:

Flow:

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	07/10/2009				W Frye	7/10/2009

TEST: ICP	ME	THOD: EPA 200	0.7			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	100	μg/L	2.9	10	S Ufegbu	7/17/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	110	μg/L	6.4	10	M Pattanayek	7/17/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	7/17/2009
Arsenic	4.4J	μg/L	0.93	5	M Pattanayek	7/17/2009
Barium	51	μg/L	2.5	5	M Pattanayek	7/17/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/17/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/17/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	7/17/2009
Cobalt	0.34J	μg/L	0.04	1	M Pattanayek	7/17/2009
Copper	2.9	μg/L	0.38	1	M Pattanayek	7/17/2009
Lead	0.38J	μg/L	0.10	· 1	M Pattanayek	7/17/2009
Manganese	58	μg/L	0.42	1	M Pattanayek	7/17/2009
Nickel	1.5	μg/L	0.25	1	M Pattanayek	7/17/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/18/2009
Silver	· U	μg/L	0.03	0.25	M Pattanayek	7/17/2009
Thallium	0.062J	μg/L	0.03	1	M Pattanayek	7/17/2009
Vanadium	4.3J	μg/L	3.4	5	M Pattanayek	7/17/2009
Zinc	4.4J	μg/L	1.9	5	M Pattanayek	7/17/2009

K00002560007

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

3

Station No.:

Date/Time Collected:

EMORY001.7RO

Sampler's Name:

07/07/2009 11:17 Geoff Klein

County:

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

TEST: Mercury

S Staller

METH	OD.	FΡΔ	245 1	

Field Determinations

Dissolved Oxygen: 11.28

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

8.77

253

25.34

pH Units

uMHO

mg/L

CFS

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	0.043J	μg/L	0.029	0.2	A Wilson	7/21/2009	_

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560008

Project Name:

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Emory River mile 0.1

Project Site No.:

Station No.: EMORY000.1RO Date/Time Collected: 11:26 07/07/2009

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Billing Code:

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009 14:04

Received By:

S Staller

Field Determinations

:Hq

8.80

pH Units

Chlorine, residual:

Conductivity:

247

uMHO

Temperature:

25.50

Dissolved Oxygen: 11.75

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT UNITS MDL			MQL	ANALYZED BY:	DATE
Digestion Metals	07/10/2009				W Frye	7/10/2009

TEST: ICP METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	120	μg/L	2.9	10	S Ufegbu	7/17/2009	

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	110	μg/L	6.4	10	M Pattanayek	7/17/2009
Antimony	U .	μg/L	0.33	1	M Pattanayek	7/17/2009
Arsenic	3.9J	μg/L	0.93	5 .	M Pattanayek	7/17/2009
Barium	51	μg/L	2.5	5	M Pattanayek	7/17/2009
Beryllium	U	μg/L	0.11	1 .	M Pattanayek	7/17/2009
Cadmium	U	μg/L	0.41	. 1	M Pattanayek	7/17/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	7/17/2009
Cobalt	0.33J	μg/L	0.04	1	M Pattanayek	7/17/2009
Copper	2.8	μg/L	0.38	1	M Pattanayek	7/17/2009
Lead	0.37J	μg/L	0.10	1	M Pattanayek	7/17/2009
Manganese	59	μg/L	0.42	1	M Pattanayek	7/17/2009
Nickel	1.4	μg/L	0.25	1	M Pattanayek	7/17/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/18/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/17/2009
Thallium	0.045J	μg/L	0.03	1	M Pattanayek	7/17/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	7/17/2009
Zinc	3.5J	μg/L	1.9	5 ·	M Pattanayek	7/17/2009

K00002560008

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.:

EMORY000.1RO

Date/Time Collected: Sampler's Name:

07/07/2009 11:26

County:

Geoff Klein ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

Field Determinations

:Ha

8.80

pH Units

Chlorine, residual: Conductivity:

Dissolved Oxygen: 11.75

uMHO

Temperature:

247 25.50

mg/L

Other:

Flow:

CFS

TEST: Mercury	ME	THOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Mercury	0.038J	μg/L	0.029	0.2	A Wilson	7/21/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560009

Project Name:

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Clinch River mile 2.3

Project Site No.:

Station No.:

CLINC002.3RO

Date/Time Collected:

07/07/2009 11:37

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

TDEC-WPC

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

Field Determinations

pH:

8.32

pH Units

Chlorine, residual:

Conductivity:

272

uMHO

Temperature:

25.23 **Dissolved Oxygen: 9.63**

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2							
ANALYTE	RESULT UNITS MDL MQL ANALYZE					DATE		
Digestion Metals	07/10/2009				W Frye	7/10/2009		

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DATE						
Iron	94	μg/L	2.9	10	S Ufegbu	7/17/2009	

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	150	μg/L	6.4	10	M Pattanayek	7/17/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	7/17/2009
Arsenic	5.6	μg/L	0.93	5	M Pattanayek	7/17/2009
Barium	59	μg/L	2.5	5	M Pattanayek	7/17/2009
Beryllium	. U	μg/L	0.11	1	M Pattanayek	7/17/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/17/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	7/17/2009
Cobalt	0.31J	μg/L	0.04	1	M Pattanayek	7/17/2009
Copper	5.8	μg/L	0.38	1	M Pattanayek	7/17/2009
Lead	0.35J	μg/L	0.10	1	M Pattanayek	7/17/2009
Manganese	. 45	μg/L	0.42	1	M Pattanayek	7/17/2009
Nickel	1.5	μg/L	0.25	1	M Pattanayek	7/17/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/18/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/17/2009
Thallium	0.062J	μg/L	0.03	1	M Pattanayek	7/17/2009
Vanadium	5.9	μg/L	3.4	5	M Pattanayek	7/17/2009
Zinc	· 3.8J	μg/L	1.9	5	M Pattanayek	7/17/2009

K00002560009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

Date/Time Collected:

CLINC002.3RO 07/07/2009 11:37

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

Field Determinations

pH:

8.32

pH Units

Chlorine, residual:

Conductivity:

272

uMHO

mg/L

Temperature:

25.23

Dissolved Oxygen: 9.63

Other:

Flow:

CFS

TEST: Mercury	METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	0.055J	μg/L	0.029	0.2	A Wilson	7/21/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.:

KingAshOutF2

Date/Time Collected:

07/07/2009 11:44

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

TEST: Digestion Metals

07/07/2009

14:04

Received By:

ANALYTE

Digestion Metals

S Staller

MET	HOD: EPA 20	0.2			
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
07/10/2009				W Frye	7/10/2009

Field Determinations

Dissolved Oxygen: 8.38

Chlorine, residual:

Conductivity:

Temperature:

8.02

272

25.34

pH Units

uMHO

mg/L

CFS

:Hq

Other:

Flow:

TEST: ICP	METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Iron	150	μg/L	2.9	10	S Ufegbu	7/17/2009		

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	200	μg/L	6.4	10	M Pattanayek	7/17/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	7/17/2009
Arsenic	5.4	μg/L	0.93	5	M Pattanayek	7/17/2009
Barium	58	μg/L	2.5	5	M Pattanayek	7/17/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/17/2009
Cadmium	ឋ	μg/L	0.41	1	M Pattanayek	7/17/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	7/17/2009
Cobalt	0.34J	μg/L	0.04	1	M Pattanayek	7/17/2009
Copper	5.3	μg/L	0.38	1	M Pattanayek	7/17/2009
Lead	0.41J	μg/L	0.10	1	M Pattanayek	7/17/2009
Manganese	52	μg/L	0.42	1	M Pattanayek	7/17/2009
Nickel	1.5	μg/L	0.25	1	M Pattanayek	7/17/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/18/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	7/17/2009
Thallium	0.051J	μg/L	0.03	1	M Pattanayek	7/17/2009
Vanadium	5.8	μg/L	3.4	5	M Pattanayek	7/17/2009
Zinc	3.4J	μg/L	1,9	5	M Pattanayek	7/17/2009

K00002560010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.:

Date/Time Collected:

KingAshOutF2

Sampler's Name:

07/07/2009 11:44 Geoff Klein

County:

ROANE - 73

Sample Matrix:

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

TEST: Mercury

S Staller

	M	ETH	OD:	EPA	245.	1
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Field Determinations

Dissolved Oxygen: 8.38

Chlorine, residual:

Conductivity:

Temperature:

8.02

272

25.34

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.046J	μg/L	0.029	0.2	A Wilson	7/21/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002560011

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC004.5RO

Date/Time Collected:

Sampler's Name:

07/07/2009 11:54

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC

Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009

14:04

Received By:

S Staller

Field Determinations

:Hq

8.77

pH Units

uMHO

Conductivity: Temperature: 273

25.20

Dissolved Oxygen: 12.07

mg/L

Other:

CFS Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	07/10/2009				W Frye	7/10/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	62	μg/L	2.9	10	S Ufegbu	7/17/2009

TEST: ICP-MS	ST: ICP-MS METHOD: EPA 200.8					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	64	μg/L	6.4	10	M Pattanayek	7/17/2009
Antimony	0.51J	μg/L	0.33	1	M Pattanayek	7/17/2009
Arsenic	2.7J	μg/L	0.93	5	M Pattanayek	7/17/2009
Barium	45	μg/L	2.5	5	M Pattanayek	7/17/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	7/17/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	7/17/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	7/17/2009
Cobalt	0.26J	μg/L ΄	0.04	1	M Pattanayek	7/17/2009
Copper	3.2	μg/L	0.38	1	M Pattanayek	7/17/2009
Lead	0.28J	μg/L	0.10	1	M Pattanayek	7/17/2009
Manganese	37	μg/L	0.42	1	M Pattanayek	7/17/2009
Nickel	1.5	μg/L	0.25	1	M Pattanayek	7/17/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	7/18/2009
Silver	0.032J	μg/L	0.03	0.25	M Pattanayek	7/17/2009
Thallium	0.58J	μg/L	0.03	1	M Pattanayek	7/17/2009
Vanadium	5.4	μg/L	3.4	5	M Pattanayek	7/17/2009
Zinc	8.5	μg/L	1.9	5	M Pattanayek	7/17/2009

K00002560011

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Field Determinations

Dissolved Oxygen: 12.07

Conductivity:

Temperature:

8.77

273

25.20

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC004.5RO

Date/Time Collected: Sampler's Name:

07/07/2009 11:54

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

07/07/2009 14:04

Received By:

S Staller

EST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Wilson	7/21/2009
Wordary		μ9/-	0.029	0.2	A MII2011	1121

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit